



ERNEST ORLANDO LAWRENCE
BERKELEY NATIONAL LABORATORY

Environment, Health, & Safety
Training Program

EHS 344 Safe Handling of Engineered Nanoscale Particulate Matter
Course Syllabus

Subject Category: General
Course Length: 0.5 hour
Delivery Mode: Web-based Training

Course Prerequisite: None
Medical Approval: None
Frequency: Annual

Course Purpose: This course is designed for employees and guests who synthesize, investigate or otherwise work with engineered nanomaterials in a manner that could result in a potential exposure or environmental release. "Engineered nanomaterials" are intentionally created and have structures <100 nanometers. NOTE: "Engineered materials" do NOT include larger materials with nanoscale features (e.g., etched silicon wafers) nor biomolecules (e.g., proteins, nucleic acids, and carbohydrates).

Course Objectives:

1. Identify how exposure to nanoparticles might occur
2. Recall that nanomaterials may display novel toxicity and reactivity
3. Name which type of nanomaterial is not likely to present new hazards
4. Recognize that high surface area may drive toxicity
5. Recall the toxic properties of carbon nanotubes
6. Select the locations nanoparticles have been shown to distribute and travel in the body
7. Define what someone should always assume about novel nanoparticles
8. Recall engineering controls for handling nanoparticles
9. Recall proper housekeeping methods when working with nanoparticles
10. Identify proper labeling and storage methods for work with nanoparticles
11. Recall the personal protective equipment, including respirators needed while performing work with nanoparticles
12. Define the correct nanoparticle waste disposal methods
13. Recall emergency and spill procedures

Subject Matter Expert: Larry McLouth

Web-based Instructional Designer: Rick Kelly and Larry McLouth

Course Instructional Materials: Web-based course

Performance Criteria: Employees will be asked to demonstrate what they have learned from the web-based training by taking a quiz at the end of the course. Employees must pass the quiz with a 100% score to receive course credit.

Web Resource: EH&S Training Program web page @ <http://www.lbl.gov/ehs/html/training.htm>